Extended GL

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1 Limit to Generative Lexicon

[3] has manually classified the 3030 examples containing the NP_1-*no* NP_2 "NP_1-GEN NP_2" construction in Japanese in accordance with the semantic relations between the two noun phrases. The examples were sorted out of the core data of the *Yahoo! Chiebukuro* portion of [1] by using ChaKi.NET 1.2 .

Crucially, I argued that the Generaive Lexicon Theory [5] needed to be expanded to include not only inherent properties but also referential descriptions, because 8% of the data involved the modification of the temporary elements, such as location, time, and manner of the referent of NP_2 (e.g., *Operaza-no Kaijin* "Phantom of the Opera", that is, Phantom *in* the Opera) [4].

The survey indicated that 29% of all instances are examples that NP_1 *selectively binds*, or modifies the inherent property, that is, the qualia structure of the lexical meaning of the NP_2 (e.g., *Fuji-no rendora* "a soap opera by Fuji TV", i.e., a soap opera *created* by Fuji TV) [5]. Regarding the 25% of all instances, NP_2 is a relational noun in a broader sense, and NP_1 represents their arguments. For example, in *mune-no mae* "in front of the chest," *mae* is considered to be a two-place holder noun which takes *mune* as its argument.

Table 1: Figure 1: Distribution of Semantic Patterns of NP_1-*no* NP_2 Construction

selective binding of qualia in NP_2	886	0.292409241
NP_2 is a relational noun	777	0.256435644
NP_2 is a deverbal noun	445	0.146864686
NP_1 is adjectival property	395	0.130363036
referential module modification of NP_2	244	0.080528053
NP_1 is a quantifiers	152	0.050165017
possession	45	0.014851485
demonstratives	32	0.010561056
NP_1 is a deverbal nouns	24	0.007590759
NP_1 is theme of deadjectival NP_2	23	0.007306226
adverb	6	0.001980198
selective binding of qualia in NP_1	1	0.000330033
total	3030	1

2 Extended GL

Even though Pustejovsky's four qualia express inherent properties of referents, I propose supplementing lexical semantics with information about the referents. Besides type, argument, event, and qualia structures in GL [cf. 2, 79], the referential module (EXTENSION(EXT)) has subcategories of TIME, LOC, and MANNER roles. For example, *Operaza-no* "of The Opera" in *operaza-no kaijin* "the Phantom of the Opera" and *mayonaka-no* "midnight" in *mayonaka-no kaigan* "the midnight beach" modify extensional modules of the Phantom and the beach. In *baiku-no karera* "those on scooters," scooter-riding is one of the temporary properties of the referents, so that it is a MANNER role modification.

(1) Original GL Template

$$
\begin{bmatrix}
\alpha \\
\text{TYPESTR} = \begin{bmatrix} \text{ARG1} = \text{THE TYPE OF } \alpha \end{bmatrix} \\
\text{ARGSTR} = \begin{bmatrix} \text{D-ARG1} = \text{OTHER ARGUMENTS IN THE QUALIA} \end{bmatrix} \\
\text{EVENTSTR} = \begin{bmatrix} \text{E1} = \text{EVENTS IN THE QUALIA} \end{bmatrix} \\
\text{QUALIA} = \begin{bmatrix} \text{FORMAL} = \text{ISA-RELATION} \\ \text{CONST} = \text{PARTS OF } \alpha \\ \text{TELIC} = \text{PURPOSE OF } \alpha \\ \text{AGENT} = \text{HOW } \alpha \text{ IS BROUGHT ABOUT} \end{bmatrix}
\end{bmatrix}
$$

[2, 79]

(2) Template for Extended GL

$$
\begin{bmatrix}
\alpha \\
\text{TYPESTR} = \begin{bmatrix} \text{ARG1} = \text{THE TYPE OF } \alpha \end{bmatrix} \\
\text{ARGSTR} = \begin{bmatrix} \text{D-ARG1} = \text{OTHER ARGUMENTS IN THE QUALIA} \end{bmatrix} \\
\text{EVENTSTR} = \begin{bmatrix} \text{E1} = \text{EVENTS IN THE QUALIA} \end{bmatrix} \\
\text{QUALIA} = \begin{bmatrix} \text{FORMAL} = \text{ISA-RELATION} \\ \text{CONST} = \text{PARTS OF } \alpha \\ \text{TELIC} = \text{PURPOSE OF } \alpha \\ \text{AGENT} = \text{HOW } \alpha \text{ IS BROUGHT ABOUT} \end{bmatrix} \\
\textbf{EXT} = \begin{bmatrix} \textbf{LOC} = \text{IN}\left(\boxed{e2}, \boxed{x}, \boxed{l} \right) \\ \textbf{TIME} = \text{AT}\left(\boxed{e2}, \boxed{x}, \boxed{t} \right) \\ \textbf{MANNER} = \text{WITH}\left(\boxed{e2}, \boxed{x}, \boxed{y} \right) \end{bmatrix}
\end{bmatrix}
$$

As a result, selective binding not only applies to qualia structure but also to a referential module, which enables the computation of the meaning of the NP_1-*no* NP_2 construction. For example, *Operaza-no* "of the Opera" specifies the location of the Phantom as the Opera, *mayonaka-no* "midnight" modifies time and *baiku-no* "on scooters" fills the manner role.

(3) a. ⟦*The_Phantom_of_the_Opera*⟧   =
   λx[phantom(x) & [EXT = ∃e[be-phantom(e) &
   theme(e) = x & location(e) = The Opera]]]

   b. ⟦*midnight_beach*⟧ = λx[beach(x) & [EXT =
   ∃e[be-beach(e) & theme(e) = x & time(e) = mid-
   night]]]

   c. ⟦*those_on_scooters*⟧^{g} =λx[g(1) = x & [EXT =
   ∃e[born(e) & manner(e) = with-scooter]]]

3   EGL Database

I have made a small database of fifty lexical items taken
from [1] in the format of the Extended GL.

References

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Japanese, BCCWJ2009 edition*. The National Insti-
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